July 24, 2003

IN RE: DOCKET NO. 2002-367-C & 2002-408-C

COPY OF **SUBSTITUTED DIRECT TESTIMONY OF WILLIAM E. TAYLOR, PH.D. FILED ON BEHALF OF BELLSOUTH** HAS BEEN DISTRIBUTED TO THE FOLLOWING:

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BELLSOUTH

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July 24, 2003

The Honorable Gary E. Walsh
Executive Director
Public Service Commission of South Carolina
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Columbia, South Carolina 29211

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SC PUBLIC SERVICE COMMISSION

Re: Generic Proceeding to Address Abuse of Market Position
Docket No. 2002-367-C
Proceeding to Define the Term "Inflation-Based Index"
Docket No. 2002-408-C

Dear Mr. Walsh:

Enclosed for filing are the original and twenty-five copies of the substituted direct testimony of BellSouth Telecommunications, Inc. ("BellSouth") witness William E. Taylor, Ph.D. in the above-referenced matters.

Due to computer errors, the copies of Dr. Taylor's testimony that BellSouth filed and served yesterday did not contain page numbers. The only difference between the attached substituted testimony and the testimony that was filed and served yesterday is the addition of page numbers.

By copy of this letter, I am serving the attached substituted testimony on all parties of record as reflected by the attached Certificate of Service.

Sincerely,

Patrick Turner

Patrick W. Turner

S. C. PUBLIC SERVICE COMMISSION
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BEFORE THE
PUBLIC SERVICE COMMISSION OF SOUTH CAROLINA

IN RE: GENERIC PROCEEDING TO ADDRESS THE DEFINITION OF "ABUSE OF MARKET POSITION" AND	)	**DOCKET NO. 2002-367-C**
GENERIC PROCEEDING TO DEFINE THE TERM "INFLATION-BASED INDEX"	)	**DOCKET NO. 2002-408-C**

DIRECT TESTIMONY

OF

WILLIAM E. TAYLOR, Ph.D.

ON BEHALF OF

BELLSOUTH TELECOMMUNICATIONS, INC.

JULY 23, 2003

NERA
Economic Consulting

DIRECT TESTIMONY OF WILLIAM E. TAYLOR, Ph.D.

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ON BEHALF OF BELLSOUTH TELECOMMUNICATIONS, INC.

DIRECT TESTIMONY OF WILLIAM E. TAYLOR, Ph.D.

BEFORE THE PUBLIC SERVICE COMMISSION OF SOUTH CAROLINA

DOCKET NOS. 2002-367-C AND 2002-408-C

JULY 23, 2003

I. INTRODUCTION AND SUMMARY

Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS, AND CURRENT POSITION.

A. My name is William E. Taylor. I am Senior Vice President of National Economic Research Associates, Inc. ("NERA"), head of its Communications Practice, and head of its Cambridge office located at One Main Street, Cambridge, Massachusetts 02142.

Q. PLEASE DESCRIBE YOUR EDUCATIONAL, PROFESSIONAL, AND BUSINESS EXPERIENCE.

A. I have been an economist and statistician for over thirty years. I earned a Bachelor of Arts degree from Harvard College in 1968, a Master of Arts degree in Statistics from the University of California at Berkeley in 1970, and a Ph.D. from Berkeley in 1974, specializing in Industrial Organization and Econometrics. For the past thirty years, I have taught and published several papers in statistics and theoretical and applied econometrics, which is the study of statistical methods applied to economic data. I have also taught and published research in microeconomics and telecommunications policy at academic and research institutions. Specifically, I have taught at the Economics Departments of Cornell University, the Catholic University of Louvain in Belgium, and the Massachusetts Institute

of Technology. I have also conducted research at Bell Laboratories and Bell Communications Research, Inc. I have participated in telecommunications regulatory proceedings before state public service commissions, on topics including anti-competitive pricing and the presence and exercise of market power. Before the Public Service Commission of South Carolina ("Commission"), I have appeared in Docket No. 97-101-C (on probable economic benefits from BellSouth's entry into long distance telecommunications) on behalf of BellSouth Long Distance, Inc., and in Docket Nos. 97-374-C (on economic principles for costing and pricing interconnection and unbundled network elements), 97-124-C (on economic principles for pricing interconnection services to payphone providers), 1999-259-C (ITC^DeltaCom arbitration), and 2001-209-C (Section 271 application and performance measurement) on behalf of BellSouth Telecommunications, Inc.

I have also filed testimony before the Federal Communications Commission ("FCC"), the Canadian Radio-television Telecommunications Commission and the New Zealand Commerce Commission on matters concerning incentive regulation, price cap regulation, productivity, access charges, local competition, interLATA competition, interconnection and pricing for economic efficiency. I have been chosen twice by the Mexican Federal Telecommunications Commission and Telefonos de Mexico ("Telmex") to arbitrate the renewal of the Telmex price cap plan in Mexico.

I have testified on market power and antitrust issues in federal court, including the competitive effects of mergers among major telecommunications firms and vertical integration and interconnection of telecommunications networks.

My curriculum vita is attached as Exhibit WET-1.

Q. PLEASE DESCRIBE NERA, YOUR PLACE OF EMPLOYMENT.

A. Founded in 1961, National Economic Research Associates or NERA is an internationally known economic consulting firm. It specializes in devising economic solutions to problems involving competition, regulation, finance, and public policy. Currently, NERA has 430 professionals (mostly highly experienced and credentialed economists) with 10 offices in the U.S. and overseas offices in Europe (London, Brussels, Madrid, and Rome) , Tokyo, Japan, and Sydney, Australia. In addition, NERA has on staff several internationally renowned academic economists as Special Consultants who provide their professional expertise and testimony when called upon.

The Communications Practice, of which I am the head, is a major part of NERA. For over 30 years, it has advised a large number of communications firms both within and outside the U.S. Those include the regional Bell companies and their subsidiaries, independent telephone companies, long distance companies, cable companies, and telephone operations abroad (e.g., Canada, Mexico, Europe, Japan and East Asia, Australia, and South America). In addition, this practice has provided testimony or other input to governmental entities such as the FCC, the Department of Justice, the U.S. Congress, state regulatory commissions and legislatures, and courts of law. Other clients include industry forums like the United States Telephone Association. In 2000, the NERA Communications Practice received the International Business Leadership Award from the Center for International Business Education and Research at the University of Florida, citing our work on incentive regulation, transfer pricing, technological convergence and

opening new markets to competition.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. My purpose is to address, on behalf of BellSouth Telecommunications, Inc. ("BellSouth"), two issues under consideration in this consolidated proceeding. The first concerns Section 58-9-576(B)(5) of the Code of Laws of South Carolina Annotated ("South Carolina Code" or "Statute") which states:

> The LEC's shall set rates for all other services on a basis that does not unreasonably discriminate between similarly situated customers; provided, however, that all such rates are subject to a complaint process for *abuse of market position* in accordance with guidelines to be adopted by the commission.[1]

One of the purposes of this proceeding is to establish a definition for the term "abuse of market position" as it is used in the Statute, and to determine whether various forms of conduct constitute such an abuse of market position.

The second issue concerns Section 58-9-576(B)(4) of the South Carolina Code which states:

> For those companies to which item (3) applies, after the expiration of the period set forth above, the rates for flat-rate local exchange residential and single-line business service provided by a LEC may be adjusted on an annual basis pursuant to *an inflation-based index*.[2]

The other purpose of this proceeding is to establish a generic definition of "inflation-based index" as that term is used in the Statute.

In this context, testimony on both issues has been submitted by James E. Spearman,

[1] "LEC" is the standard acronym for local exchange carrier (or, company). Emphasis added.

[2] Emphasis added.

Ph.D., of the Research Department of the Commission.[3] My testimony is also responsive to Dr. Spearman's testimony.

Q. PLEASE SUMMARIZE YOUR TESTIMONY.

A. Sections 58-9-576(B)(4) and 58-9-576(B)(5) of the South Carolina Code set forth the standards by which price regulation is to apply to two categories of LEC services, namely, basic local exchange services and non-basic/optional services, respectively. The first such standard requires that prices of basic local exchange services supplied to residential and single-line business customers be adjusted annually in accordance with changes in the annual rate of inflation (captured in an "inflation-based index). The second standard establishes an "abuse of market position" test for determining whether any anti-competitive conduct is involved in the manner LECs set prices for these services.

My testimony develops economic and operational tests for applying the two standards. For the "abuse of market position" standard, I identify predatory pricing and cross-subsidy as two potential forms of anti-competitive pricing conduct that could be considered an "abuse of market position" because they could lead to the acquisition and, eventually, the exercise of market power. I explain the price floors that can be used as safe harbors to protect against anti-competitive pricing. I also explain how resale of all LEC services, including those employing essential facilities, deters potentially another type of anti-competitive pricing that could arise from LEC control of essential facilities. In the ultimate analysis, not all failures of service prices to meet or exceed the designated safe

[3] Direct Testimony of James E. Spearman, Ph.D. in Docket No. 2002-367-C ("*Spearman Direct I*"), and Direct
(continued...)

harbor price floor qualify as abuses of market position; for this reason, I recommend case-by-case analysis of such instances, using standard antitrust principles. Finally, I distinguish between improper tying (as a type of anti-competitive conduct that does not directly depend on price) and service bundling (that is pro-competitive and consumer-friendly).

For the "inflation-based index," I discuss the purpose and design of price regulation and, more specifically, the role of such an index in price regulation for designated basic local exchange services. I discuss potential candidates for the inflation-based index to be employed in price regulation plans for South Carolina LECs, and recommend the use of the gross domestic product price index for that purpose. Finally, my testimony explains why, with rapidly emerging competition in South Carolina's local exchange markets, the next step up from indexed price regulation should be greater pricing flexibility for all LEC services.

Q. HOW IS YOUR TESTIMONY ORGANIZED?

A. There are two sections in the remainder of the testimony. Section II addresses the issue of "abuse of market position," and Section III addresses the issue of "inflation-based index."

II. ABUSE OF MARKET POSITION

A. Context

Q. IN WHAT CONTEXT DOES THE PHRASE "ABUSE OF MARKET POSITION"

(...continued)

Testimony of James E. Spearman, Ph.D. in Docket No. 2002-408-C ("*Spearman Direct II*").

IN SECTION 58-9-576(B)(5) OF THE SOUTH CAROLINA CODE APPEAR?

A. The context is alternative regulation for local exchange carrier ("LEC") telecommunications services. This section of the Statute specifies when a LEC can elect to have its service prices regulated by an alternative form of regulation "in lieu of other forms of regulation including, but not limited to, rate of return or rate base monitoring or regulation." In particular, subsection (A) of §58-9-576 states that any LEC that has an approved interconnection agreement with a competitor or faces competition for basic local exchange telephone service may elect alternative regulation as described in subsection (B). The alternative regulation plan in subsection (B) caps the rates for flat-rated local exchange services for residential and single-line business customers for two years following the LEC's election of alternative regulation [§(B)(3)];[4] after two years, these basic rates "may be adjusted on an annual basis pursuant to an inflation-based index" [§(B)(4)]. For all other services, LECs may set rates on any basis that does not unreasonably discriminate between similarly-situated customers, "subject to a complaint process for abuse of market position in accordance with guidelines to be adopted by the Commission" [§(B)(4)].

Thus, the Statute envisions a plan in which price changes for some of the LEC's services are subject to an annual cap, and in which price changes for the rest of its services are not capped, but are subject to non-discrimination and abuse of market position safeguards. Except for the fact that the South Carolina legislation makes these latter two safeguards explicit, this structure is a common form of price regulation for

[4] As explained in the Direct testimony of BellSouth witness John Ruscilli, the Commission has ruled that an agreement between BellSouth and the Consumer Advocate includes additional services to be capped and extends (continued...)

telecommunications services in the United States: increases in prices for certain services—basic or essential—are directly regulated and those for other services—non-basic or optional—are not.[5]

Q. HAS THE COMMISSION PROVIDED ANY INSIGHT INTO THE INTERPRETATION OF THE PHRASE "ABUSE OF MARKET POWER"?

A. Yes. In its *Guidelines Order*, the Commission addressed §58-9-576(B)(5) and required that BellSouth's prices for services other than basic service "equal or exceed" BellSouth's long run incremental costs because lower prices "could indicate an abuse of market power." The Commission then accepted BellSouth's voluntary cap on price changes for these other services, limiting annual price increases to five percent of aggregate revenues from those services.[6] The Commission also observed that these prices must be non-discriminatory and not "reflect an abuse of market position" which it did not further define. [*Guidelines Order,* Findings of Fact and Conclusions of Law, ¶¶6-7]

Thus, in setting guidelines for BellSouth's implementation of §58-9-576(B)(5), the Commission adopted a three-pronged plan that:

1. capped price increases for designated services;

(...continued)

the length of the cap period.

[5] Each of the approximately 35 state price cap plans in place in the U.S. for telecommunications services has these features: that not all services are price-regulated and that some service price increases, generally for basic exchange access service, are subject to some form of cap. In addition, many of these plans establish price floors for services.

[6] "Annual" should be understood to mean the 12-month period that constitutes a year under the price regulation plan, not specifically the January-December period.

2. accepted BellSouth's voluntary cap on annual price increases for "other services"; and

3. imposed a presumptive price floor at long run incremental cost for the "other services."

Beyond these rules, the Commission's *Guidelines Order* did not discuss other pricing behavior that could constitute an "abuse of market position."

B. "Abuse of Market Position" in Economics

Q. DOES THE PHRASE "ABUSE OF MARKET POSITION" OCCUR IN REGULATORY OR ANTITRUST ECONOMICS?

A. Yes. To my knowledge, antitrust policy and laws in the European Union, Australia and New Zealand generally classify as "abuse of market position," (or a similar phrase) the sorts of offenses proscribed in the U.S. by Section 2 of the Sherman Act, Sections 3 and 4 of the Clayton Act, the Federal Trade Commission Act, the Robinson-Patman Act, and the Celler-Kefauver Act. The phrases "abuse of market position" and "abuse of market power" occur nearly synonymously in the economic discussions of cases in these countries.

In economics, we generally distinguish between "abuse" and "exercise" of market power. The phrase "*exercise* of market power" denotes pricing at supra-competitive levels or, equivalently, withholding output from the market, in order to exploit market power and earn higher profits.[7] On the other hand, the phrase "*abuse* of market power" or "anti-competitive behavior" would generally denote improper actions used to *acquire* or

[7] A price is termed "supra-competitive" when it is higher than the level that would be expected under competitive conditions. For example, an *un*regulated monopoly might attempt to maximize its profits by setting price at a supra-competitive level.

maintain market power; i.e., actions that suppress the competitive process in order to make the exercise of market power possible. In South Carolina specifically, the Statute clearly addresses only *service prices* that could constitute abuses of market positions. Thus the improper actions that have the potential to subvert competition and harm consumers concern anti-competitive pricing in South Carolina.

In the U.S., exercise of market power is not considered an "abuse" of anything. A firm can acquire market power in the U.S. by legal means (e.g., superior skill or industry, patents, etc.), and it is generally permissible for such a firm to price its products and services at the profit-maximizing level. In economic terms, such prices and profits are seen as the firm's reward for superior performance and are an important incentive in a market economy. Hence, supra-competitive prices charged by a legal monopolist in the U.S. would not be an impermissible "abuse" of market power but rather a perfectly permissible "exercise" of market power.[8] On the other hand, anti-competitive actions that suppress the competitive process that can be used to acquire or sustain market power, are generally proscribed by Section 2 of the Sherman Act, and could accurately be termed an "abuse of market power."[9]

Q. DO YOU AGREE WITH STAFF WITNESS DR. SPEARMAN'S INTERPRETATION OF THE PHRASE "ABUSE OF MARKET POSITION" ?

A. Yes, for the most part. First, I agree with him [*Spearman Direct I*, at 2] that economists

[8] BellSouth does not fall within the definition of a legal monopolist.

[9] See, generally, S.C. Code Ann. §39-2-10 *et. seq.*

use the words "position" and "power" interchangeably in that phrase. Indeed, in an Order addressing the term "abuse of market position," the Commission itself uses the phrase "abuse of market *power*" in its Finding that a long run incremental price floor should be imposed on BellSouth's prices for services other than basic local exchange services. [*Guidelines Order,* Findings of Fact and Conclusions of Law, §6]

Second, I agree in part with his "more expansive" definition of "abuse of market position as any action that effectively prohibits a new firm from entering the market" [*Spearman Direct I*, at 3]. In particular, I agree that "abuse of market position," as that term is used in §58-9-576(B)(5) of the Statute, should be defined as anti-competitive *pricing* conduct that harms the competitive process, of which entry is an important part. As discussed above, I would not classify the mere possession of market power or its exercise as an "abuse" of market power, and Dr. Spearman's testimony appears consistent with this view. Also, as I explain later, any investigation of alleged anti-competitive pricing conduct should only happen in a properly defined product and geographic market.

I would disagree with Dr. Spearman's definition if it were taken, literally, to include *any* action that prohibits (or prevents) entry by competing firms. Some perfectly pro-competitive actions—ones that benefit consumers—can have the effect of prohibiting or discouraging entry of competing firms. For example, if the incumbent firm reduces cost, invests in new technology, introduces new services, or improves the quality of current services, entry will certainly be more difficult for competitors, and these actions may well prevent firms from entering the market although they would have done so but for the improvements. But, of course, such actions are not at all anti-competitive. They are the

desired outcome of the competitive process, not a subversion of it, and they make consumers better off. Even though some firms may no longer be viable entrants or competitors, the competitive *process* is helped, not harmed, by such behavior.

Third, for the purpose of interpreting the term "abuse of market position" in this proceeding, I would exclude conduct unrelated to the pricing of other-than-basic services. Thus, for example, while Dr. Spearman appears [*Spearman Direct I*, at 5] to classify false and misleading advertising as an "abuse of market position," I would not, for the purposes of defining that term as it is used in §58-9-576(B)(5). That section of the South Carolina Code controls the rates the LECs set for all other-than-basic services and nothing more. Consumers and competitors have other remedies if a LEC engages in false or misleading advertising, but these acts would have nothing to do with whether the prices for other-than-basic services were anti-competitive.

In summary, I agree with Dr. Spearman that "abuse of market position" means what economists mean by "abuse of market power" and that such abuse relates to *anti-competitive conduct* rather than the mere possession of market power. I agree with him that any anti-competitive action that "effectively prohibits a new firm from entering a market" would be an abuse of market position, but some pro-competitive actions have the same effect and they should not be classified as an abuse of market position. Finally, I believe that only pricing actions are addressed by that term as it is used in the Statute. Even there, certain forms of seemingly anti-competitive pricing may not really be so. For example, an ILEC that is more efficient than a competitor may set a price below the *competitor's* cost without being accused of anti-competitive conduct.

Q. HOW WOULD YOU DEFINE "ABUSE OF MARKET POSITION" IN THIS CONTEXT?

A. I would define "abuse of market position" for these purposes as anti-competitive *pricing* conduct that harms the competitive process. Additionally, the "abuse" must be in a product and geographic market in which the LEC possesses or is likely to possess market power.

Q. WHY MUST THE ABUSE BE IN A PRODUCT AND GEOGRAPHIC MARKET IN WHICH THE LEC POSSESSES OR IS LIKELY TO POSSESS MARKET POWER?

A. The Statute is concerned with an abuse of market position or market power. Market power is measured in the context of a specific product and geographic market. The relevant market would comprise both the other-than-basic service in question and all similar and substitute services for it that are available to consumers within a defined geographic area. Once the product and geographic market is defined, one can determine whether the LEC has market power in that market and whether the LEC's pricing conduct is an abuse of that power.

Q. WHY IS THAT AN ECONOMICALLY APPROPRIATE DEFINITION FOR THE PURPOSES OF SECTION 58-9-576(B)(5)?

A. Under some circumstances, a firm that possesses market power would find it profitable to engage in conduct that could harm the competitive process. Generally, for such conduct to be profitable, the firm will have to either possess market power in some market or have a reasonable prospect of acquiring it. Otherwise, profits foregone by investing in the

destruction of rivals or in raising their costs could never be recouped by supra-competitive pricing, and the conduct would not be profitable. If a LEC could set prices for other-than-basic services that harmed competition and were profitable for the firm, those prices—and only those prices—should be proscribed by the abuse of market position clause in §58-9-576(B)(5).

C. Market Power in Telecommunications Markets

Q. WHAT IS MARKET POWER?

A. Market power is generally defined as the ability of a firm to profitably raise and sustain prices above the competitive market level for a significant period of time. Possession of market power implies the presence of barriers to entry; otherwise, supra-competitive prices would attract entry which would bid down prices to the competitive market level.

Q. DOES THE CONCEPT OF MARKET POWER APPLY TO TELECOMMUNICATIONS MARKETS?

A. Not any more, as a practical matter. In local telecommunications markets, regulation and technology created entry barriers for many years. The economies of scale and scope associated with a ubiquitous wireline local exchange network suggested that local service was a natural monopoly: i.e., that costs to society would be lower if all service were provided by a single network. Accordingly, until shortly before the Telecommunications Act of 1996 ("1996 Act") was implemented, entry into the local exchange markets was forbidden in most states, and incumbent LEC ("ILEC") prices were regulated by public service commissions so that consumers could benefit from the lower costs of a single

supplier without suffering from higher prices due to the exercise of market power by that supplier.

Q. HOW DID THE TELECOMMUNICATIONS ACT OF 1996 AFFECT ILEC MARKET POWER FOR LOCAL SERVICES?

A. An explicit goal of the 1996 Act was to open the local exchange market to competition. To accomplish this, §253 of the 1996 Act eliminated legal and regulatory restrictions on local competition and §251 (as implemented by the FCC and this Commission) undercut the ILECs' cost advantages by requiring that they

1. interconnect with competitive local exchange carriers ("CLECs");
2. resell all retail telecommunications services to CLECs at an avoided cost discount; and
3. lease unbundled network elements ("UNEs") to CLECs at rates based on total element long run incremental cost ("TELRIC").

Thus a new entrant could construct its own facilities, lease facilities from the ILEC, resell ILEC retail services and interconnect with the ILEC's network, all at prices which gave the entrant the benefit of the ILEC's network economies of scale and scope. Generally, the entrant's choice about mode of entry depends on how efficiently or cheaply it can supply the service as a consequence of its choice.

These measures opened local exchange markets to competition. Legal entry barriers completely disappeared, and the availability of resale and UNEs at regulated prices effectively removed the greatest part of the sunk costs of entry into local exchange markets. As a result of the implementation of the 1996 Act, barriers to entry were removed, so that if prices of telecommunications services ever significantly exceeded their competitive market

level, competitors could enter without incurring large fixed costs.

Q. HOW DID THESE CHANGES AFFECT ILEC MARKET POWER IN LOCAL EXCHANGE MARKETS IN SOUTH CAROLINA?

A. First, reflecting this change in circumstances, §58-9-576(A) of the South Carolina Code keyed its option of alternative regulation for LECs to the approval of an interconnection agreement or the presence of a competitor for the LEC's basic local exchange service. The economic logic of this restriction is that once local markets are open to competition, the ability of a LEC to increase its retail telecommunications prices above the competitive market level is removed. Any significant, permanent markup of prices over the competitive market level would signal a profit opportunity for entrants which could enter local exchange markets and bid prices down to a lower level without incurring large fixed costs. Under these circumstances, the South Carolina legislature left price regulation for telecommunications services to market forces, subject to the following safeguards:

1. A two-year price cap on certain basic local exchange services followed by an inflation-indexed price cap for those services;
2. A prohibition against unreasonably discriminating between similarly-situated customers; and,
3. A complaint process for determining whether rates for other services constitute an abuse of market position.

This Commission has adopted the following additional safeguards with regard to BellSouth's prices:

1. A five-year cap on certain designated basic services;
2. Prices of other services must equal or exceed their corresponding long run incremental costs; and,

3. A 5 percent cap on annual price increases for other services.[10]

Second, in February 2002, this Commission found that BellSouth had complied with the provisions of the 1996 Act and certified to the FCC that BellSouth's local exchange markets in South Carolina were open to competition.[11] The FCC concurred in September 2002.[12] At that time, nearly 12 percent of South Carolina local exchange lines were supplied by CLECs.[13] Thus, in fact, BellSouth's local exchange markets are currently open to competition, and it is difficult to conceive of a telecommunications service that could be priced significantly and permanently above its market price without attracting entry that, in turn, would cause that price to be bid down to the competitive level.

Q. IN ITS RECENT TRIENNIAL REVIEW DECISION[14], THE FCC HAS QUESTIONED WHETHER CERTAIN UNES SHOULD CONTINUE TO BE PROVIDED AT RATES BASED ON TOTAL ELEMENT LONG RUN INCREMENTAL COST ("TELRIC"). COULD THIS DECISION AFFECT YOUR CONCLUSION THAT LOCAL EXCHANGE MARKETS ARE OPEN TO COMPETITION IN SOUTH CAROLINA?

[10] *Guidelines Order*, Findings of Fact and Conclusions of Law, at ¶¶3-7.

[11] S.C. PSC, *In re Application of BellSouth Telecommunications, Inc. to Provide In-Region InterLATA Services Pursuant to Section 271 of the Telecommunications Act of 1996*, Docket No. 2001-209-C, Order Addressing Statement and Compliance with Section 271 of the Telecommunications Act of 1996, February 14, 2002.

[12] FCC, *In the Matter of Joint Application by BellSouth Corporation, BellSouth Telecommunications, Inc., and BellSouth Long Distance, Inc. for Provision of In-Region, InterLATA Services in Alabama, Kentucky, Mississippi, North Carolina, and South Carolina*, WC Docket No. 02-150, Memorandum Opinion and Order, released September 18, 2002.

[13] *Id.*, at ¶3.

[14] FCC News Release, "FCC Adopts New Rules for Network Unbundling Obligations of Incumbent Local Phone Companies," February 20, 2003.

A. No. According to the §251(d)(2) of the 1996 Act, ILECs must provide UNEs at TELRIC-based rates whenever the absence of the UNEs impair the ability of competitors to provide services in the retail market. Whenever (if ever) the FCC or this Commission might determine that an ILEC need not continue to provide some UNE at TELRIC-based rates, the ILEC would have to have first shown that the absence of that UNE at that price would not impair the CLEC's ability to compete. Hence, local exchange markets in South Carolina will continue to be open to competition irrespective of the outcome of the FCC's Triennial Review activities.

Q. HOW DO ECONOMISTS MEASURE MARKET POWER?

A. Quantitatively, the market power of a firm depends entirely on the price elasticity of the demand curve it faces: i.e., the degree to which customers substitute away from its service when it raises its price. As discussed by Dr. Spearman [*Spearman Direct I*, at 8], the Lerner Index, which measures the markup of price over incremental cost, is commonly cited as a measure of market power. This index is directly related to the price elasticity of demand because, at the profit-maximizing price, the Lerner index is equal to the reciprocal of the price elasticity of demand: i.e.,

$$L = (P - MC) / P = 1 / e$$

where e is the absolute value of the price elasticity of the demand curve faced by the firm, P is the profit-maximizing price, and MC is the marginal (or incremental) cost.[15] Thus, the more easily consumers can substitute away from the firm's service when it raises its price

[15] See, e.g., W.M. Landes and R.A. Posner, "Market Power in Antitrust Cases," *Harvard Law Review*, 94, 1981, at (continued...)

(i.e., the greater the elasticity), the smaller the percent markup of price over cost at the profit-maximizing price and the smaller will be the Lerner index and this measure of market power. Given the construction of the Lerner index, *any* price that is above incremental cost would appear to indicate some degree of market power.

Q. DOES THE LERNER INDEX MEASURE MARKET POWER ACCURATELY IN TELECOMMUNICATIONS MARKETS?

A. Not necessarily. First, as measured by the Lerner index, market power is measured relative to a perfectly competitive market, where price equals incremental cost. There are few, if any, real-world examples of such markets.[16] Thus, in real-world markets that are effectively—but not perfectly—competitive, every firm will possess some amount of market power (by this measure). Moreover, in telecommunications markets, where the technology is characterized by a high percentage of fixed costs, price must exceed incremental cost by a substantial margin to recover the total cost of the firm, and that margin is not associated with the ability of the firm to control the market price.

Second, an assumption of the Lerner Index is that margins and elasticities are measured at the profit-maximizing level. Most telecommunications service prices have been regulated for many years and these prices have not been based upon cost. For

(...continued)

937-996.

[16] In a perfectly competitive market, (1) firms supply the same homogeneous service (or product), (2) the number of competitors is large and each competitor has negligible market share and, more importantly, no control over the market price of the service, (3) no firm experiences economies of either scale or scope, (4) no firm is regulated or has franchise obligations, (5) there are no restrictions on capital, and depreciation is determined purely by technological and economic conditions (including risk), and (6) customers are homogeneous and

(continued...)

example, because of state and national policies to promote widely available universal service, prices for basic services have been priced well below cost. Thus the assumption that current prices represent profit-maximizing prices for the ILEC is generally unwarranted. Moreover, measuring the appropriate price elasticities of demand is especially difficult because current and historical price elasticities differ from their levels at profit-maximizing prices.

For example, in the U.S. long distance market, which is generally thought to be workably competitive, average revenue per minute for toll service was about 8 cents in 2001.[17] Marginal network costs might have averaged about 1-2 cents per minute[18] and carrier access charges about 1.34 cents per minute,[19] so that an approximate value of the Lerner Index in 2001 would be about 60 percent.[20] Note that these same data imply an ordinary markup of price over incremental cost of about 140 percent.[21] Thus, the perception that price in a competitive market is fairly close to incremental cost does not

(...continued)

perfectly informed .

[17] FCC, *Reference Book of Rates, Price Indices and Household Expenditures for Telephone Services*, July 2003, Table 1.23.

[18] Sources of the 1-2 cent per minute figure are Lewis J. Perl and Jonathan Falk, *The Use of Econometric Analysis in Estimating Marginal Cost*, Presented at Bellcore and Bell Canada Industry Forum, San Diego, California, April 6, 1989, Table 2; Paul W. MacAvoy, *The Failure of Antitrust and Regulation to Establish Competition in Long-Distance Telephone Services*, MIT and AEI Presses, 1996, at 115, citing an estimate by Wharton Econometric Forecasting Associates; and Lehman Brothers, *Telecom Services: Buy the Bundle Builders, Get the Growth*, March 18, 1996: "Large customers and large resellers can purchase transport at close to long-run incremental costs, or at about the $0.02 per minute in average depreciation and network engineering costs of the major players (this is the rate that the federal government recently negotiated on its multiyear FTS 2000 contract for POP-to-POP transport)." (at 28).

[19] FCC, Industry Analysis Division. *CALLS Analysis*, May 25, 2000, Graph 8.

[20] [0.08 – 0.0334] / 0.08 = 0.58.

[21] [0.08 – 0.0334] / 0.0334 = 1.39.

apply well to telecommunications markets. One cannot infer the presence of market power in telephone markets from a large markup of price over incremental cost. Thus, the Lerner index is of little or no use in assessing market power in telecommunications markets.

Q. WHAT QUALITATIVE FACTORS ARE USED IN ASSESSING MARKET POWER?

A. Two conditions are necessary for a firm to be able to exercise market power: (1) there must be little competition from firms producing substitute services and (2) entry into the market by potential competitors must be difficult. These conditions are reflected in an alternative and more useful version of the Lerner index measure of market power, which captures the interactions among a dominant firm and a competitive fringe of smaller firms. This index (L) can be written[22] as

$$L = = 1/e = S/[e_M + (1\text{-}S) \times f]$$

where

- P is the dominant firm's price
- MC is the dominant firm's marginal (or incremental) cost
- S is the market share of the dominant firm in the relevant product and geographic market,
- e_M is the *market* price elasticity of demand[23], and

[22] Landes and Posner, *op. cit.*, equation (3).

[23] The *market* price elasticity of demand is the change in market demand (across all suppliers) when market price (the price charged by all suppliers) changes. It measures consumers' willingness to do without the service in its entirety when the price increases. In contrast, the *firm* price elasticity of demand, e, measures consumers' willingness to substitute services from other suppliers, as well as doing without the service entirely, when the firm increases its price.

- f is the supply elasticity of the competitive fringe.[24]

This index provides greater insight into how the market share of the dominant firm (and the collective share of its competitors) and the conditions of supply and demand determines the extent of market power possessed by the dominant firm. In particular, market power as measured by this index is large when the dominant firm's market share is large, the market price elasticity of demand is small, or the supply elasticity of competing firms is small.[25] This, however, is a general statement about the use of such an index to measure market power in unregulated markets. I explain below why its application specifically to regulated markets should be qualified.

A qualitative analysis of market power can be conducted by examining these three elements in the relevant market. If the firm has a large share of the relevant market, it could increase the market price simply by sacrificing or withholding a small fraction of its output from the market.[26] If the market price elasticity of demand is small, increases in the market price will not cause customers to give up the service entirely. In contrast, if that elasticity is relatively high, the dominant firm's attempt to bring about even small increases in the market price may not succeed. Finally, if increases in the price charged by the dominant firm have little effect on the supply offered by competitors—due perhaps to entry barriers or insufficient capacity—such price increases could prove profitable for the

[24] The competitors' supply elasticity measures the change in the amount supplied by competitors caused by a change in the dominant firm's price.

[25] It is worth noting that the index only measures the possible existence (and extent) of market power. It does *not* say anything about the exercise or, more importantly, abuse of market power.

[26] This is subject to the caveat, as I explain below, that the relation between market share and market power (as implied by the index discussed here) is not the same in unregulated and regulated markets.

dominant firm. With relatively more elastic supply from competitors, the dominant firm's attempts to raise the price would have less success.

The important point to note that the percent markup of price over incremental cost is not particularly insightful about, or even relevant for, the market power of the dominant firm. Instead, the alternative index measure indicates that various elements may interact to determine exactly how much market power the dominant firm actually possesses. No single element may, in and of itself, be the critical determinant of market power. Higher values of one of these elements (market share of the dominant firm) would tend to increase the market power of the dominant firm, while higher values of the other two elements (market elasticity of demand and supply elasticity of the competitors as a group) would tend to decrease that market power. Therefore, in any given situation, how much market power the dominant firm may possess would depend on whether these two sets of elements work to offset or reinforce each other.

Q. SHOULD THE USE OF THIS INDEX TO MEASURE MARKET POWER BE QUALIFIED IN REGULATED MARKETS?

A. Yes. The biggest difference between unregulated and regulated markets which have dominant firms (i.e., firms with high market share relative to their competitors) is that the paths taken to dominance (in a market share sense) by those firms are very different. In unregulated markets, dominant firms *acquire* their high market shares through various means including superior efficiency, greater innovativeness, better efforts to develop customer relationships and loyalty and, sometimes, even pricing and output strategies that would be considered an abuse of market position under the terms of this proceeding.

In regulated markets, in contrast, high market shares of incumbent firms have arisen for *historical reasons*. For example, prior to the 1996 Act, ILECs were given exclusive franchises over their service territories in return for a commitment to serve as carriers of last resort and to provide certain basic local exchange services at low prices that were frequently below cost. The high market shares that arose as a result cannot be attributed to any abuse of market position. In this context, any index of market power that links higher market power to higher market share (other things being equal) can be misleading for both measurement and policy purposes. The real question is: can an ILEC with market share that is "high" for historical reasons abuse its supposed market power (as the above-mentioned index would predict)? The answer is "no" because, as explained earlier in my testimony, even a dominant firm that has to share its most important facilities and services with its smaller competitors (whether through unbundling or resale) cannot prevent those competitors from effectively confining its prices to competitive levels. Moreover, when the dominant firm is regulated, there are additional explicit safeguards against anti-competitive pricing by that firm.

Q. HOW DO THE MARKET FACTORS DISCUSSSED ABOVE APPLY TO TELECOMMUNICATIONS MARKETS IN SOUTH CAROLINA IN THE CONTEXT OF §58-9-576(B)(5) OF THE SOUTH CAROLINA CODE?

A. You can't abuse what you don't have. For a proposed price for a service other than flat-rated local exchange services for residential and single-line business customers to be an "abuse of market position," the ILEC must obviously possess market power for the relevant telecommunications service. For each telecommunications service, then, a careful

assessment of the market factors is required to determine whether a firm possesses or is likely to acquire market power. First, the relevant market must be determined, consisting of services that are sufficiently close substitutes in the eye of the consumer. For example, the market for basic local exchange services provided by wireline LECs would also include functionally equivalent or substitute services such as wireless, satellite, and cable telephony and—depending on the service—even internet protocol telephony. Alternatively, the market for a LEC's voicemail service would also include voicemail services offered by wireless or other means, including answering machines and manned answering services.[27]

Second, as noted above, measures of market share for LEC services in the relevant market may overstate any market power an ILEC may have because current prices have been determined by regulation rather than profit maximization. Thus, ILECs in South Carolina have a large share of the residential basic exchange markets in their territories, not because local service is a natural monopoly, but rather because regulation has kept the prices for these services so low. Competitive entry is now picking up, and the removal of subsidies from residential basic local exchange service rates would spur such entry even more. At competitive market prices that emerge following the withdrawal of subsidies, ILEC market share (which is already dropping steadily) would be even lower (because the ILEC's price would be higher) and the competitors' supply elasticity would be higher, so that the market power index for residential basic local exchange service would be lower.

Third, the 1996 Act significantly increased the competitors' supply elasticity,

[27] See the Direct testimony of John Ruscilli for several examples of competitive offerings by CLECs in South Carolina.

decreasing ILEC market power for local exchange services. Mandatory resale and supply of ILEC UNEs at TELRIC-based prices drastically reduces the sunk costs that entrants must incur to supply local exchange services (reducing entry barriers) and gives competitors the effective capacity to serve the entire local exchange market. Thus, even for services where entrants currently have a small market share, any attempt by the ILEC to hold retail prices above the competitive market level will increase competitors' output, stimulate demand for competitors' services and ultimately be unprofitable for the ILEC.

Fourth, most (if not all) of the services that are subject to §58-9-576(B)(5) are optional services. In terms of market power, another constraint on the ILEC's ability to hold the market price above the competitive level for these services is the *market* demand elasticity. Customers for these services have the option of doing without the service in its entirety and—unlike basic local exchange services—consumers do not have to buy the service from the ILEC or its competitors.

Fifth, many of the relevant services are supplied and demanded in combination with other services. No consumer wants to buy call-waiting from anyone but the supplier of his local exchange service. Similarly, no supplier wants to offer call-waiting on a stand-alone basis. Hence, an appraisal of LEC market power for such vertical services must take into account the market in which they are actually bought and sold.

Finally, high markups of observed prices over incremental cost do not, by themselves, indicate significant market power in telecommunications markets that are subject to high fixed costs and economies of scale. In such markets, all firms must price significantly above incremental cost simply to recover their total costs. As discussed above

in the long distance example, workably competitive markets in telecommunications can exhibit simple markups of price above incremental cost in excess of 100 percent.

D. Abuse of Market Power in Telecommunications Markets

Q. HOW CAN A FIRM MAINTAIN OR ACQUIRE MARKET POWER BY ANTI-COMPETITIVE CONDUCT?

A. There are several kinds of actions that a firm can undertake to reduce competition in a market and increase or maintain its market position. The antitrust laws deal with such conduct largely through Section 2 of the Sherman Act, which broadly forbids exclusionary behavior that adversely affects competition by firms that have market power or could obtain market power. These actions include predatory pricing, refusal to supply rivals with essential facilities, vertical restrictions such as resale price maintenance and exclusive dealing, and tie-in sales.[28]

As discussed earlier, for the purpose of defining "abuse of market position" in §58-9-576(B)(5) of the South Carolina Code, we are only concerned with anti-competitive conduct expressed through proposed prices for "other services." Thus, other anti-competitive actions such as price-fixing and output agreements, mergers, vertical restraints, and exclusive dealing—though anti-competitive and arguably an abuse of market power—need not be considered in this proceeding. The only question the Commission needs to address in this proceeding is whether a proposed *price* represents an abuse of

[28] This is the textbook list of the forms of exclusionary conduct proscribed by Section 2 of the Sherman Act. See, e.g. D.W. Carlton and J.M. Perloff, *Modern Industrial Organization*, Second edition, New York: Harper-Collins (1994), at 825-843.

market position.

Q. DOES DR. SPEARMAN CLASSIFY ADDITIONAL FORMS OF CONDUCT AS ABUSE OF MARKET POSITION IN THE CONTEXT OF §58-9-576(B)(5)?

A. Yes. Dr. Spearman [*Spearman Direct I*, at 5-7] lists (1) false or misleading advertising by a dominant company, (2) the introduction of new or improved products or variations of products, (3) expansion of output or output capacity beyond the profit-maximizing point, and (4) horizontal or vertical mergers as additional anti-competitive conduct pertinent to the definition of "abuse of market position" in §58-9-576(B)(5).

I disagree with Dr. Spearman that these strategies are relevant in the current inquiry. However it may be useful to put some of these forms of conduct in an economic context.

First, misleading advertising can be anti-competitive, i.e., it can harm the competitive process itself rather than simply the competitor. However, it is difficult to see how the possession of market power affects the potential gains or the societal losses from false advertising. While generally reprehensible (and addressable through a variety of legal and regulatory channels), false advertising is generally not classified as an abuse of market power or position. And, of course, it has nothing to do with the price of services other than basic local exchange.

Second, it is difficult to classify the introduction of new or improved services or bundles of services as an offense at all.[29] The objective of the competitive process is to bring the benefits of lower prices, improved products, and new and innovative services to

[29] See the discussion of the FCC's views on bundling later in my testimony or in the Direct testimony of John (continued...)

consumers, and whether it is the dominant firm or its competitors that succeeds is immaterial.

Third, expansion of output or capacity may make life more difficult for competitors, but there is nothing anti-competitive about the strategy.

1. Predatory Pricing

Q. WHAT IS PREDATORY PRICING IN ECONOMICS?

A. Predatory pricing occurs when a firm (1) reduces its price below its cost in order to drive competitors out of the market and then (2) raises its price to supra-competitive levels to recoup its lost profits. Elements of predatory pricing include incurring up-front losses with the expectation of receiving long-term gains, pricing below some measure of cost, and undertaking a pricing strategy that would only be profitable if a rival were driven from the market.[30]

Q. IS PREDATORY PRICING A COMMON ABUSE OF MARKET POSITION IN ECONOMICS?

A. No. There are few circumstances in which a predatory pricing strategy is either profitable or the most profitable strategy available to the firm. After all, the strategy consists of harming oneself (incurring losses) in the expectation that the harm to the competitor will be greater (and it will leave the market). The strategy also requires that entry into the

(...continued)

Ruscilli.

[30] See, e.g., Carlton and Perloff, *op. cit.*, at 384.

market be difficult so that when the dominant firm raises price to recoup lost profits, other firms will not simply enter and bid down the price. In addition, the strategy cannot succeed if competitors forced to exit leave behind productive capacity that can be re-activated when the incumbent firm attempts to raise prices. Hence, the predatory firm must also absorb that productive capacity or otherwise raise entry barriers to prevent re-entry when it raises price. For these reasons, Section 2 predatory pricing cases have been scarce in the U.S., particularly since the Supreme Court concluded in 1986 that predatory pricing was rarely tried and rarely successful.[31]

Q. SHOULD THE COMMISSION BE CONCERNED ABOUT PREDATORY PRICING IN ENFORCING §58-9-576(B)(5)?

A. No. First, price reductions are generally good for consumers, and regulators should think long and hard before preventing firms from lowering prices. Certainly when a dominant firm reduces its price, competitors will find it more difficult to succeed in the market. However, the competitive *process* suffers no harm at all. Indeed, lower prices and better services are one of the desired outcomes of the competitive process and evidence that it is working as intended.

Second, the Commission has already addressed the issue, at least for BellSouth. In its *Guidelines Order* [Findings of Fact and Conclusions of Law, at §6], the Commission imposed a long run incremental cost (LRIC) price floor on BellSouth's "other services." Such a floor is a conservative safe harbor, since selling any service to a customer at a price

[31] *Matsushita Electric Industrial Co. v. Zenith Radio Corporation*, 106 S. Ct. 1348 (1986).

that exceeds the incremental cost of the service is profitable to the firm, and it thus does not require that competitors exit the market for the price to be profitable. An LRIC price floor is conservative because there may be circumstances in which a firm finds it profitable for a time to sell services below long run incremental cost but above short run incremental cost. For example, if demand is falling over time, it may be profitable to price at short run incremental cost and use capacity that otherwise would be wasted. Thus, although the LRIC provides a safe harbor from predatory pricing, not every instance of pricing below LRIC is automatically predatory. A case-by-case inquiry using antitrust principles is warranted in those circumstances.

Q. SHOULD THE COMMISSION BE CONCERNED ABOUT CROSS-SUBSIDIZATION?

A. Not necessarily. Cross-subsidization in economics occurs when a regulated firm prices a service unprofitably low and is able to make up the difference by raising the price of another (regulated) service. In the statutory South Carolina LEC alternative regulation plan, basic local exchange services cannot be used to subsidize other-than-basic services because the prices of basic local exchange services are subject to an inflation-based index. Hence, the reduction in price of an other-than-basis-exchange service does not give the LEC any additional ability to raise the price of basic local exchange services.

In addition, the possibility of subsidization among other-than-basic services is eliminated, at least for BellSouth, by the long run incremental cost price floor in the Commission's *Guidelines Order*. In economic theory, a service receives a subsidy if it is priced below the (total service) long run incremental cost of the service ("TSLRIC"), i.e.,

the long run incremental cost where the increment of demand is the entire service. Adherence to such a price floor ensures that no other-than-basic service is receiving a subsidy.

Q. DO PROBLEMS ARISE IN APPLYING COST-BASED PRICE FLOORS FOR TELECOMMUNICATIONS SERVICES?

A. Yes. Two issues which the Commission may have to address in the context of a §58-9-576(B)(5) complaint are (1) the appropriate measure of cost and (2) the definition of the product being sold. First, economic theory supports the use of a cost-based price floor on the assumption that the cost study actually measures the incremental cost of the increment of demand offered for sale. In practice, long run incremental cost studies are frequently averaged across geographies and customer groups and over peak and off-peak periods. Sometimes such averaging is benign: a statewide average price can be supported by a statewide average cost. However, sometimes averaging can conceal significant differences in cost. Off-peak usage costs may be close to zero, so a very low night-time toll price would not necessarily be predatory even if it were below the long run incremental cost of usage (averaged over peak and off-peak periods).

Second, predatory pricing is sometimes alleged when services are combined and sold as a bundle. For example, a common marketing technique is to offer "free" installation with a service. Since the long run incremental cost of installation is greater than $0, one might erroneously allege that installation is priced at a predatory level. However, installation is never sold on a stand-alone basis; it is always combined with the service itself. Thus, provided that the long run incremental cost of the service (including

installation) is covered by the price, the offer is not predatory. Indeed, all it does is give customers the ability to pay for installation over the period they use the service, rather than requiring them to pay for installation up front.

Q. DOES FAILING A SIMPLE COST-BASED TEST NECESSARILY IMPLY THAT PREDATION HAS OCCURRED?

A. No. Firms do not make production plans in a static sense or pursue profits only in the current period. If growth is important to the firm, it is more likely to maximize long run profits (subject to whatever constraints apply) with appropriate time discounting and amortization of lumpy fixed costs. A new firm may also use promotional techniques (including below cost prices) that result in short run losses, but which are recovered in the long run. If such behavior is *not* directed at forcing exit by competing firms, then it cannot be strategic conduct aimed at acquiring market power.

2. Essential Facilities

Q. WHAT IS AN ESSENTIAL FACILITY?

A. Suppose the dominant firm in an industry controls an input that other firms require in order to enter the market. Examples of such "essential facilities" in antitrust law include railroad bridges over rivers (required by competing railroads) and aluminum ingot (required by vertically-unintegrated aluminum fabricators). In telecommunications, ILEC UNEs are frequently alleged to be such essential facilities for CLECs as is ILEC carrier access service supplied to vertically-unintegrated long distance carriers.

A form of predatory pricing in such cases could occur if the ILEC (for example)

prices the essential facility too high relative to the price for the retail service so that even an efficient dependent competitor would be unable to match the ILEC's retail price and make a profit. While, in theory, this could lead to a form of anti-competitive pricing, in telecommunications markets, this *cannot happen* because ILEC services that rely on essential facilities are available for resale at an avoided cost discount to the ILEC's competitors. The resale option is priced by design so that efficient competitors can always use the LEC's essential network facilities and compete against the LEC's retail price.

Q. DOES DR. SPEARMAN RAISE THE PROSPECT OF ESSENTIAL FACILITIES CONTRIBUTING TO ABUSES OF MARKET POSITION?

A. Yes. He cites "[o]wnership or control of a critical resource" [*Spearman Direct I*, at 3] as a mechanism by which firms can acquire market power, but he does not address pricing problems associated with that mechanism. As stated above, the availability for resale of ILEC services that rely on essential facilities eliminates any need to be concerned on this account.

3. Tying

Q. WHAT IS "TYING" IN ANTITRUST ECONOMICS?

A. Tying means that a monopoly supplier of service A refuses to supply that service by itself and requires customers to also purchase service B, for which it faces competition. Under some circumstances, the monopolist can make more money by following such a strategy, and competing suppliers of service B can be placed at a competitive disadvantage. That happens because any customer who buys the competitors' services must find a substitute

for the monopolist's service A, which is, by assumption, hard to do.

Q. IS TYING ALWAYS PROFITABLE, SO THAT IT IS LIKELY TO BE A POPULAR ANTI-COMPETITIVE STRATEGY?

A. No. Careful economic analysis has questioned whether such leveraging strategies can generally be profitable for the monopolist, and, with some exceptions, these strategies can be shown to be unprofitable.[32] When tying is unprofitable, it is unlikely that a firm would voluntarily adopt a business plan that entailed tying. Since we frequently observe telecommunications firms offering various packages of services to different customers, it is likely that there is some reason other than trying to harm competitors or consumers that makes selling packages of services attractive. For example, we rarely see local exchange carriers offering stand-alone call-waiting and inside wire maintenance services, and it is probably the case that the economies of scope in providing those services together with basic exchange service are so large that no firm could profitably supply such services on a stand-alone basis. Most telecommunications firms voluntarily choose to provide some services to everyone and some services exclusively to their presubscribed customers.

Q. WHY IS TYING GENERALLY UNPROFITABLE?

A. The basic reason why tying fails to increase profits in general is that the monopolist would be expected to charge the profit-maximizing price for service A *to begin with*, so that no additional profit could be realized from selling the service at a higher price. Tying the

[32] See, for example, the section on tie-in sales in D.W. Carlton and J.M. Perloff, *Modern Industrial Organization*, Second Edition, New York: HarperCollins, 1994, at 467-480.

supply of service B to that of A effectively raises the price of service A for those customers who would not ordinarily choose to buy B at the competitive market price, and an effective price increase for service A would reduce rather than increase profits to the firm.

Q. IS TYING ALWAYS UNPROFITABLE?

A. No, not always. There are specific circumstances in which tying can be profitable for a firm with market power. When demands for services A and B are interrelated, it is sometimes possible that requiring the purchase of B can facilitate price discrimination in the monopolized service A, which can increase firm profits. Consider an example in which the monopolized item (A) is salt and the other item (B) is salt dispenser, which is available competitively from both the salt producer and other manufacturers of salt dispensers. The salt producer could profitably tie sales of its salt dispensers to its sales of salt by denying salt to any customer who does not also buy a salt dispenser (perhaps even at a price than that charged by competing suppliers of salt dispensers). No salt dispenser manufacturer would have any countervailing power to prevent this form of tying by the salt producer.[33]

A second exception occurs when service A is regulated, so that regulation prevents the monopolist from charging the profit-maximizing price for A in the first place. Here, forcing customers to buy B in addition to A could increase the firm's profits because its regulated price is less than the monopoly price. Thus, an effective price increase for service A (caused by bundling the service together with service B at a higher-than-

[33] Other classic examples of tying facilitating price discrimination occur where the purchase of a machine is tied to the purchase of material the machine needs to function: *e.g.*, razors and razor blades, computer processors and punchcards, *etc.*

competitive price) could increase profits.

Q. CAN TYING BE ANTI-COMPETITIVE?

A. Yes, but only when true tying—not the mere packaging or bundling of services—occurs. Suppose—contrary to what I believe to be the case for BellSouth in South Carolina—the LEC retains market power for residential basic local exchange service. Anti-competitive tying would occur only if the LEC then required anyone who wanted its residential basic local exchange service to also buy some other service, say, service B.

Q. IS TYING NECESSARILY ANTI-COMPETITIVE?

A. No. For example, if the LEC has no market power for a service B, requiring customers to also buy its local exchange service (for example) is not anti-competitive. Customers who don't want the LEC's B service have competitive alternatives, and they can combine those alternative B services with a CLEC's local exchange service if they wish. Hence, the LEC derives no competitive advantage in the local exchange market by requiring its service B customers to also buy its local exchange service.

Economic textbooks that discuss tying and the court cases involving tying show that market power is a necessary condition for tying to be anti-competitive. For example, a leading economic textbook states:

> the rule is that tying is illegal when the seller possesses sufficient market power in the market of the tying product and the amount of commerce involved is substantial.[34]

[34] W. Kip Viscusi, John M Vernon, Joseph E. Harrington, Jr., *Economics of Regulation and Antitrust*, 2nd edition, Cambridge, MA: The MIT Press, 1995. at 260.

Another observes that

> courts nowadays express the view that the plaintiff must show both that the producer maintains a monopolistic position in the tying product and that a tie-in activity restrains a substantial volume of commerce of competitors in the tied product.[35]

Dr. Spearman apparently concurs [*Spearman Direct I*, at 6], citing the Supreme Court's *Jefferson Parish* decision as requiring the firm to have market power for the tying product and to foreclose a substantial volume of demand.

In addition, there are other, pro-competitive reasons why a LEC would chose to supply service B only to its local exchange customers. On the cost side, some LEC B services were designed as overlay services provided to the LEC's local exchange customers. Changes in the LEC's operations and support systems would be necessary for the LEC to provide service B on a stand-alone basis. For example, no LEC would provide call-waiting on a stand-alone basis to another LEC's customer because the network cost of switching and transporting the calls would dwarf the cost of supplying call-waiting from the switch that provides dial-tone to the customer.

On the demand side, the availability of some B services as overlay services can be thought of as enhancements to the LEC's local exchange service. The LEC's business case for developing and implementing those services will take into account the profit from selling the service itself, as well as the incremental profit from selling additional basic exchange service along with service B. If the LEC is required to sell all of its services on a stand-alone basis, that second component of the LEC business case will disappear, and the

[35] Oz Shy, *Industrial Organization Theory and Applications*, Cambridge, MA: The MIT Press, 1995, at 389.

LEC will have a diminished incentive to develop, implement, invest in equipment, and market such services.

4. Bundling

Q. WHAT IS BUNDLING?

A. Bundling is something that is distinct tying. Bundling is the practice of packaging a number of services together and offering the package for sale at a price that is less than the sum of the prices of the constituent services.

Q. IS BUNDLING NECESSARILY ANTI-COMPETITIVE?

A. No. In fact, bundling is typically pro-competitive and consumer-friendly. It is a common practice in telecommunications and other markets, reflecting both cost savings on the part of suppliers and preferences for buying bundled services on the part of consumers. In the words of a recent FCC decision on bundling:

> We conclude that allowing all carriers to bundle products and services is generally procompetitive and beneficial to consumers. Bundling encourages competition by giving carriers flexibility both to differentiate themselves from their competitors and to target segments of the consumer market with product offerings designed to meet the needs of individual customers[36]

> We view bundling as the offering of two or more products or services at a single price, typically less than the sum of the separate prices...While "one-stop" shopping is convenient for consumers, we conclude that they can benefit even more from bundled packages offered at a price discount. We agree, in particular, with the commenters who point out that consumers benefit from bundling

[36] FCC, *In the Matter of Policy and Rules Concerning the Interstate, Interxchange Marketplace; Implementation of Section 254(g) of the Communications Act of 1934, as amended; and 1998 Biennial Regulatory Review — Review of Customer Premises Equipment and Enhanced Services Unbundling Rules in the Interexchange, Exchange Access and Local Exchange Markets*, CC Docket Nos. 96-61 and 98-183, Report and Order ("*FCC Bundling Order*"), released March 30, 2001, ¶14.

because it eliminates the need for carriers to separately provision, market, and bill services, and therefore reduces the transaction costs that carriers pass on to consumers. Indeed, we have recognized that bundling provides benefits that packages of separately priced services do not, finding in the case of two merged companies that by offering products "as a package at a price below that of the individual prices of the package's components when sold separately, the merged firm would both lower costs and pass at least some of those cost savings on to consumers." Bundling can further reduce costs for consumers by eliminating the time and effort needed to find products and services in the market, negotiate appropriate purchase terms, and assemble the desired combinations. This is particularly important for enhanced services and CPE, package components that many consumers may perceive to be complex.[37]

We also agree with the commenters who assert that allowing carriers to bundle transmission services with CPE and enhanced services will enable them to offer innovative packages of goods and services that will provide customers with efficiencies and pricing that they demand, and find that the Commission's rules should not unnecessarily restrict consumer choice in this area.[38]

Q. WOULD IT BE AN ABUSE OF MARKET POSITION TO INCLUDE IN A BUNDLE A SERVICE FOR WHICH THE LEC POSSESSED MARKET POWER? HOW COULD A COMPETITOR MATCH THE LEC'S BUNDLE?

A. It would not necessarily be an abuse of market position to bundle services for which the LEC has market power with services for which it doesn't. It is clearly not abuse when (1) the bundle is priced no lower than the long run incremental cost of the bundle and (2) the services for which the LEC has market power are also supplied on a stand-alone basis. In this situation, there is no harm to competition from the LEC selling such a bundle. Take residential local exchange service as a (hypothetical) example of a service for which the LEC may, arguably, have market power. Bundling local exchange service together with

[37] *FCC Bundling Order*, ¶15. Footnotes omitted.

[38] *FCC Bundling Order*, ¶16. Footnotes omitted.

other telecommunications services does not disadvantage any supplier of those services, because the LEC's local exchange customers can continue to buy the LEC's local exchange service à la carte while purchasing other services from competitors.

As the FCC observed:

> We further find that incumbent local exchange carriers should be able to offer packages of service that include CPE, enhanced services, and local exchange service at one price. We acknowledge that because the local exchange market is not substantially competitive and because incumbent LECs have market power, we must balance the risk that the incumbents can act anticompetitively with the public interest benefits associated with bundling. After undertaking this analysis, we conclude that the risk of anticompetitive behavior by the incumbent LECs is low, not only because of the economic difficulty that even dominant carriers face in attempting to link forcibly the purchase of one component to another, but also because of the safeguards that currently exist to protect against this behavior. In particular, incumbent LECs will, under state law, offer local exchange service separately on an unbundled tariffed basis if they bundle such service with CPE. We also require them to offer exchange access service and any other service for which the Commission considers them to be dominant separately on nondiscriminatory terms if they bundle such service with CPE. We go on to conclude that the risk is also outweighed by the consumer benefits of allowing bundling. In the case of enhanced services, we emphasize that we are not eliminating at this time the fundamental provisions contained in our *Computer II* and *Computer III* proceedings that facilities-based carriers continue to offer the underlying transmission service on nondiscriminatory terms, and that competitive enhanced services providers should therefore continue to have access to this critical input.[39]

Finally, in order to compete, competitors do not necessarily need to match exactly a LEC's bundle of services. Every carrier today (wireless, cable and wireline) offers different bundles of services targeting different market niches in which they think they have a competitive advantage. When bundles include only regulated telecommunications services, those regulated services must be offered at avoided cost discounts from the prices

[39] *FCC Bundling Order*, ¶12.

of those services when offered on a stand-alone basis.

E. Conclusions

Q. HOW WOULD YOU RECOMMEND THE COMMISSION APPLY YOUR DEFINITION OF "ABUSE OF MARKET POSITION" IN A §58-9-576(B)(5) COMPLAINT?

A. Under §58-9-576(B)(5), the Commission has to determine whether a proposed price for an other-than-basic service implies an abuse of market position. I agree with Dr. Spearman's conclusion [*Spearman Direct I*, at 9] that some allegations of pricing abuse would have to be adjudicated on a case-by-case basis if they fall outside a safe harbor, as I explain below. Few absolute tests can be devised to determine whether any given pricing behavior is anti-competitive rather than simply actively competitive. There is a wealth of experience in U.S. antitrust law, and I would recommend that the Commission treat a complaint case as a Federal court would treat a Section 2 case.

Q. ARE THERE ANY "SAFE HARBORS" THE COMMISSION COULD ADOPT TO IDENTIFY PRICING CONDUCT THAT CLEARLY IS *NOT* AN ABUSE OF MARKET POSITION?

A. Yes. The two specific forms of anti-competitive pricing for which the Commission needs "safe harbors" are predatory pricing and cross-subsidy. The safe harbor price floor for both can be TSLRIC although, because TSLRIC is generally a higher level of cost than LRIC, such a safe harbor may be unnecessarily aggressive for (i.e., provide too much protection against) predatory pricing. If prices exceed TSLRIC, they clearly do not constitute an

abuse of market position.

A price that is above LRIC cannot be predatory, but if it is below TSLRIC at the same time, then the Commission should consider conducting, on a case-by-case basis, an inquiry using standard antitrust principles. Temporary instances of pricing below TSLRIC (or even LRIC) are, as I noted earlier, not necessarily indicators of anti-competitive pricing. Again, the case-by-case approach (as endorsed by Dr. Spearman) should be employed in those instances.

Finally, the potential for anti-competitive pricing that could arise from a LEC's exclusive control of a critical resource or essential facility is mitigated by the fact that LECs are required to permit resale of their retail services, including those that employ essential facilities.

III. INFLATION-BASED INDEX

Q. WHAT IS YOUR RECOMMENDATION FOR AN INFLATION-BASED INDEX FOR PRICE REGULATION OF SOUTH CAROLINA LECS?

A. I recommend the gross domestic product ("GDP") price index (in either fixed-base or chain-type form) for the inflation-based index in price regulation plans for South Carolina LECs. As I explain later, the chain-type GDP price index is preferable as a theoretical matter although, as a practical matter, it is not too different from the fixed-base GDP price index. The chain-type GDP price index is also equivalent to the GDP price deflator that is

recommended by Dr. Spearman.[40]

In the rest of Section III, I explain the purpose and design of price regulation, the role of an inflation-based index in price regulation, the choice of an inflation-based index from among three candidates, and look ahead to the role of price regulation in the long run.

A. Purpose and Design of Price Regulation

Q. PLEASE SUMMARIZE THE PURPOSE OF PRICE REGULATION.

A. The general purpose of price regulation is twofold: (1) to protect customers from unreasonable price increases for services for which they have few options or alternative sources of supply, and (2) to provide the regulated service provider (here, ILECs in South Carolina) the opportunity to compete by developing innovative new services and service bundles and improving their productivity. In other words, price regulation offers incentives to LECs to operate as they likely would in unregulated markets (in pursuit of maximum profits), while directly regulating prices of basic services. Price regulation allows for the easing of direct price controls—first through limited pricing flexibility, and eventually through the lifting of all restrictions—as services become available under increasingly competitive conditions in the market. Implicit in this construction is the recognition that a regulated ILEC faces different degrees of competition for the services it provides; therefore, it need not be subject to either comprehensive regulation of all its services (without due regard to their competitiveness) or of its earnings from those services. In this

[40] I also endorse Dr. Spearman's rejection of a productivity offset for any LEC price regulation plan in South Carolina. Price-regulated service prices subject to the inflation-based index should be allowed to move with changes in the rate of inflation in the general economy, as measured by changes in the GDP price index.

respect, price regulation represents a more enlightened form of ILEC regulation than traditional rate-of-return or "cost-based" regulation, and is both easier to administer and more effective for achieving policy goals.[41]

Q. ARE ALL PRICE REGULATION PLANS THE SAME?

A. No. There are several variants of price regulation, both in theory and as practiced across a variety of industries. However, these variants tend generally to fall into two broad categories: (1) index-based price regulation and (2) non-index based price regulation or price variation within fixed bounds. The difference is that index-based price regulation typically sets caps on price *levels* in accordance, e.g., with the extent of inflation that occurred in the general economy in the previous year, while non-index based price regulation typically sets bounds on price *changes* (which may occur both upward and downward) from one year to the next. The bounds set for the latter form of price regulation are typically a policy choice that may have no connection to actual inflationary changes in either output prices or input prices, or both. Within these two main variants of price regulation, it is not uncommon to see secondary variations in design as well.

B. Role of the Inflation-Based Index

Q. DOES THE PHRASE "INFLATION-BASED INDEX" IN THE SOUTH CAROLINA CODE REFER TO INDEX-BASED PRICE REGULATION?

[41] There are other reasons as well for preferring price regulation to rate-of-return regulation. However, the principal reason is that price regulation delivers superior incentives to the regulated ILECs and is far better suited to a competitive or emerging-competitive environment.

A. Yes. As stated earlier, an index-based price regulation plan typically relies on an index in which the rate of inflation is either the sole or the main component. By custom—and as supported by economic theory—the rate of inflation in question pertains to the general economy, rather than to any specific market, sector, or industry. To explain this choice, the best parallel is with the cost of living adjustment (which adjusts for the effects of general inflation over the previous year) which is applied to various compensation plans or retirement benefits (like social security income). An inflation-based adjustment leaves *real* prices unchanged, i.e., consumers pay no more in inflation-adjusted terms than before (thus leaving their purchasing power unaffected), while LECs do not suffer an erosion of the value of their revenues on account of inflation.

Q. HOW IS AN INFLATION-BASED INDEX APPLIED TO LEC SERVICE PRICES UNDER PRICE REGULATION?

A. The most common practice is to first construct a "price cap index" ("PCI") for the aggregate service that is subjected to price regulation. The PCI is a weighted average of the prices of all component services within the aggregate service. For example, if the purpose is to apply price regulation to basic residential local exchange service, then the PCI for that aggregate service could be constructed as the weighted average of the prices charged in different parts or "zones" of the service region.[42] This average is typically set to a value of 100 in the first (or "base") year of the price regulation plan.

In every subsequent year, the aggregate services' PCI may be allowed to go up or

[42] It is now customary for basic local exchange service prices to vary by zones that are distinguished by population (continued...)

down (and with that, the prices of the component services as well) by an amount that in the aggregate may not exceed the percent change in the annual inflation rate. Thus, if the inflation rate during the year since the commencement of price regulation was 3 percent, then the PCI would be reset to 103 (from the base year value of 100). Given that adjustment to the aggregate service PCI, the LEC *may* then change the component service prices (i.e., either rise or fall) so that, *on average*, those component service price changes do not amount to greater than a 3 percent increase. The annual inflation rate in every year, in effect, creates "headroom" for permissible price changes for the price-regulated aggregate service. The headroom in the example provided is 3 percent. Typically, the price-regulated LEC would not be required to raise the average price of the aggregate services by the full 3 percent simply because that headroom was available; instead, it would have the option to raise the average price by no more than 3 percent.

Q. WHEN THE APPLICATION OF THE INFLATION-BASED INDEX RESULTS IN "HEADROOM," I.E., MAKES IT PERMISSIBLE FOR THE LEC TO RAISE THE AVERAGE PRICE OF THE AGGREGATE SERVICE, MUST IT RAISE THE PRICES OF ALL THE COMPONENT SERVICES, OR EVEN RAISE THEM UNIFORMLY?

A. No, on both counts. The adjustment to the aggregate service PCI that creates positive headroom merely limits by how much the average price may be increased. Since the

(...continued)
density.

average price is a weighted average of component service prices, there could be almost an infinite number of combinations of price changes (i.e., price increases *and* decreases) for those components that result in an average price increase whose limit is set by the headroom available. Thus, hypothetically, if there are three component services (say, three zone-specific prices) and the headroom available is 3 percent, the LEC should have the discretion to do *any* one of the following:

1. Do nothing, i.e., leave all three zone prices unchanged.
2. Raise only one zone price, subject to a 3 percent limit on how much the average price could increase.
3. Raise more than one—or all three—but *not necessarily* by the same percent amount, subject to a 3 percent limit on the average price increase.
4. Raise one (or more) price *and* lower one (or more) price, subject to a 3 percent limit on the average price increase.
5. Any other combination of price changes that respects the 3 percent limit on the average price increase.

The crucial point to note is that the inflation-based index creates headroom and limits price movements *only* at the aggregate service level. This leaves price changes for the *component* services at the discretion of the LEC.

C. Choice of an Inflation-Based Index

Q. HOW SHOULD AN INFLATION-BASED INDEX BE CHOSEN FOR ALTERNATIVE REGULATION IN SOUTH CAROLINA?

A. The appropriate choice for such an index should be a broad-based measure of inflation which reflects, on average, output price movements throughout the economy. As Dr. Spearman notes [*Spearman Direct II*], the three best known indices in this regard are the Consumer Price Index ("CPI"), the Producer Price Index ("PPI"), and the Gross Domestic

Product price deflator—which is related to the Gross Domestic Product Price Index ("GDP-PI").[43]

The choice of the price index from among these rests on the suitability of each to capturing economy-wide output price movements. Similar to Dr. Spearman's approach [in *Spearman Direct II*], my testimony examines the suitability of each index by briefly defining the purpose behind each.

The CPI is defined by the Bureau of Labor Statistics ("BLS") as a measure of "the average change over time in the prices paid by urban consumers for a market basket of consumer goods and services."[44] By construction, the CPI only accounts for the prices paid by urban consumers (and urban wage-earners and clerical workers), who represent about 87 percent of the population. Thus, the CPI does not represent the prices paid by rural consumers and farm families, members of the armed forces, and residents of mental institutions and prisons. The CPI is an appropriate measure of changes in retail prices, i.e., prices at the final stage of the production-consumption process. For this reason, the CPI includes taxes related to consumption, namely, sales and excise taxes.

The PPI is defined by the BLS as a measure of "the average change over time in the selling prices received by domestic producers of goods and services. PPIs measure price change from the perspective of the seller."[45] Because of the manner in which it is constructed, the PPI measures the average price movement *prior* to the retailing stage of

[43] I elaborate on that relationship later in the testimony.

[44] See http://www.bls.gov/cpi/cpifaq.htm.

[45] See http://www.bls.gov/ppi/ppifaq.htm.

goods and services. The PPI, unlike the CPI, does not account for government subsidies, sales and excise taxes, and distribution costs. These features make the PPI least suited (among the three candidate price indices) for measuring average economy-wide output price changes.[46]

As Dr. Spearman notes [*Spearman Direct II*, at 7], the GDP implicit price deflator—which is the same as the "chain-type" GDP price index—is the most broad-based measure of average output prices throughout the economy. Unlike the BLS-produced CPI and PPI, the GDP-PI or GDP price deflator is published quarterly and annually by the U.S. Department of Commerce's Bureau of Economic Analysis. The GDP-PI (or GDP price deflator) avoids some of the selectivity problems of the CPI (which does not represent all population groups and fails to account for how consumers alter their consumption of different items when the relative prices of those items change). Also, unlike the PPI—which serves better as a measure of inflation of *wholesale* goods and services—the GDP-PI (or GDP price deflator) is not constrained by the stage of production or consumption.

Ever since price regulation arrived in the U.S., e.g., with price cap regulation of AT&T in 1989, it has become customary to use the GDP-PI as the measure of general economy-wide inflation in price regulation plans.[47] It has been widely used in the price regulation of ILECs throughout the U.S. From the standpoint of its universal reach as well

[46] For more comparisons of the CPI and the PPI, see Bridger M. Mitchell and Ingo Vogelsang, *Telecommunications Pricing: Theory and Practice*, New York: Cambridge University Press, 1991, especially the Appendix.

[47] The precursor of the GDP-PI in early price regulation plans in the U.S. was the Gross *National* Product Price Index ("GNP-PI").

custom in U.S. telecommunications regulation, the GDP-PI (or Dr. Spearman's choice of the GDP price deflator) is the best choice of an inflation index for price regulation in South Carolina. To the best of my knowledge, the GDP-PI is nearly the universal choice of inflation index for indexed price regulation plans in other states.

Q. IS THERE ANY DIFFERENCE BETWEEN THE GDP-PI AND THE GDP PRICE DEFLATOR?

A. The chain-type GDP-PI is identical to the GDP price deflator, although the "fixed-base" GDP-PI is slightly different.

Q. PLEASE EXPLAIN THE DIFFERENCE BETWEEN A CHAIN-TYPE INDEX AND A FIXED-BASE INDEX, AND INDICATE WHICH SHOULD BE PREFERRED.

A. A price index compares the level of prices in two consecutive periods (years) in the following fashion. First, the two periods to be compared are selected. The first period is labeled the "base period" and the second period is labeled the "current period." Second, a representative group of goods and services is designated as the "market basket," the average price of which is to be compared between the base period and the current period. Third, using the fixed quantities of the goods and services within the designated market basket as weights, the average price in the base period is computed and compared with a similarly-constructed average price in the current period. Those average prices are equivalently represented in index terms, i.e., by setting the base period index to 100 and the current period index to 100 *adjusted by* the percent change in the average price of the fixed market basket between the two periods.

When price levels are compared across several consecutive periods, one option is to hold fixed the market basket of goods and services in all of those periods and to compare the weighted average prices (or price index values) that result in each period. This leads to the fixed-base type price index, in which the designated market basket is set up in the base period and remains unaltered in subsequent periods.

There are, however, two critical limitations of the fixed-base index approach. First, the price index in subsequent periods always remains tied to the original choice of the market basket. So, the base period exerts a disproportionately important influence on the price index computed in all subsequent periods. Second, it does not allow for "updating" of the market basket, with the introduction of new goods and services and the exit of old goods and services from that basket. It also does not allow any convenient way to represent changes in product or service quality. For example, if improvements over time lead to better versions of a good included in the market basket, say, microwave ovens, the fixed base method is unable to reflect the quality changes that are a hallmark of different generations of those ovens.

The chain-type index remedies these two drawbacks of the fixed-base index. Chain-type indices in all three popular variants frequently computed (the Laspeyres, the Paasche, and the Fisher Ideal) are much closer together than their fixed-base counterparts.[48] The chain-type price index also avoids the problems that arise from changing (even

[48] A Laspeyres price index compares prices across periods using base period quantities as weights. A Paasche price index does so using current period quantities as weights. A Fisher Ideal price index is the geometric mean of those two price indices. Laspeyres-type CPI and PPI are routinely computed by the BLS because it is easier to fix quantity weights in a fixed base period than in the "current" period that may change over time.

infrequently) the base period in a fixed-base price index. Changing the base period introduces discontinuities that render price index values using one base period non-comparable to price index values *for the same market basket* using another base period. This problem does not arise with chain-type price indices. For these reasons, a chain-type price index is a better choice. The fact that Dr. Spearman's choice of the GDP price deflator is equivalent to choosing the chain-type GDP-PI makes it the best candidate for an inflation-based index for price regulation plans in South Carolina.

Q. DR. SPEARMAN EXPRESSES CONCERN [*SPEARMAN DIRECT II,* AT 9-10] ABOUT THE VOLATILITY OF SOME CANDIDATE PRICE INDICES AND RECOMMENDS A SMOOTHING PROCEDURE. DO YOU AGREE?

A. I agree that some candidate annual price indices, e.g., the South Urban All Items CPI-U and the GDP price deflator for the Telephone and Telegraph Expenditures category do appear quite volatile. However, I do not concur with his recommendation that, if the Commission were to select any of the volatile price indices, a five-year moving average version should be used. While the moving average procedure is a filter that mitigates quite a bit the year-to-year volatility in the price index value, its application also masks the actual manner in which prices actually changed. Therefore, in some years, an indexed price regulation plan based on a five-year moving average would overcompensate, i.e., allow LECs greater headroom (and upward adjustment in the PCI) than is warranted and, in other years, undercompensate, i.e., do precisely the opposite with headroom.

My preferred solution is to select a general economy-wide measure of output price inflation. Of all the candidate price indices suggested by Dr. Spearman, I recommend that

the Commission look no further than the GDP deflator for the overall GDP. Arguably, as Dr. Spearman's Chart 6 [*Spearman Direct II*, Exhibit JES-4] shows, this price index is the smoothest among all GDP-based price deflators (and very close to that for the Personal Consumption Expenditures category, which Dr. Spearman recommends [*Spearman Direct II*, at 8] as a possible choice).

D. Price Regulation in the Long Run

Q. HOW USEFUL COULD INDEXED PRICE REGULATION PROVE TO BE FOR RESIDENTIAL AND SINGLE-LINE BUSINESS LOCAL EXCHANGE SERVICE IN THE LONG RUN?

A. The value of indexed price regulation diminishes as increasing competition occurs over time for the regulated service or aggregate service. Stated another way, the precise form of price regulation adopted—price freeze, indexed price caps, or greater but capped pricing flexibility—needs to be matched to the state of competition in the market and the transition that occurs in that state over time.

Indexed price regulation of a South Carolina ILEC's residential and single-line business local exchange services is premised on the belief that the markets for those services are not currently—and will not be in the foreseeable future—vigorously competitive. However, there is now evidence that competition is emerging for those services even in rural areas. Thus, the time may not be far off when it would be appropriate to grant greater discretion to the ILECs in the manner in which they set prices for those basic local exchange services. Instead of capping or freezing those prices, the compromise solution with indexed price regulation appears to be to allow some flexibility

(both upwards and downwards) during this period of competitive transition, but in a way that permits the ILECs to, at most, keep those prices constant in real terms.

The long-standing practice of closely regulating ILECs' price for residential local exchange service has meant that that price is typically below incremental cost. Ironically, this practice (long sustained by subsidies borne mainly by the prices of the "other services" provided by those ILECs) has almost certainly contributed to the delayed onset of competition for residential and single-line business service. Equally efficient competitors for that service are unlikely to enter the market unless promised a positive and competitive profit margin. Prices below incremental cost make it difficult—if not impossible—for potential entrants to seriously consider providing the service on a stand alone basis, and induce them instead to either (1) only provide the service in conjunction with bundled offerings that include other services such vertical features and long distance services; or (2) provide other services (including multiple-line business local exchange service) for which more attractive margins are available.[49]

When a service price is frozen for a period of time, the inflation-adjusted (or real) level of that price tends to fall as long as inflation—no matter how low—continues to occur. This can have the unfortunate side-effect of discouraging entry by competitive service providers. Removing the price of that service from a frozen state to an indexed price regulation plan which, at least, permits periodic price increases to keep up with

[49] Dramatic evidence on this point is available from FCC sources. In South Carolina, as of December 31, 2002, while 82 percent of the end-user lines served by incumbent LECs were to residential and single-line business customers, only 37 percent of the end-user lines served by competitive LECs were to the same customer segment. See FCC, *Local Telephone Competition: Status as of December 31, 2002*, Industry Analysis and

(continued...)

inflation, is a step in the right direction.

As competition develops, however, the next logical step is to move beyond even indexed price regulation.[50] Ideally, any indexed price regulation plan should only commence with *all* regulated service prices already at efficient levels in relation to underlying incremental costs. If ILECs' residential and single-line business local exchange service prices are not realigned with their costs *before* the indexed price regulation plan is implemented (as is the case in South Carolina), then those ILECs would at least be able to keep up with inflation, but it is uncertain how expeditiously they would be able to bring their prices in line with their incremental costs or to efficient levels. At some point, if price caps based on an inflation-based index are removed, and limited pricing flexibility is introduced instead (effectively subjecting residential and single-line business local exchange service prices only to the same "abuse of market position" test that would apply to other-than-basic services), the opportunity for subsidy-free and efficient pricing would be restored all around. In such a market, competitive entry would be more likely than it is at present, and that burgeoning competition would itself set effective caps on ILECs' prices.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

(...continued)

Technology Division, Wireline Competition Bureau, June 23, Table 11.

[50] Competition may be said to have "developed" for residential local exchange service when new entrants can be relied upon to discipline the ILEC's price for that service. That is, the appropriate test in this regard should not be couched in terms of market share or erosion in that share. Given that the price in question is currently is below incremental cost, there is little danger of supra-competitive pricing by the ILEC any time soon. In fact, as noted earlier, the price may need to *rise* in order to attract more competition. Thus, the appropriate time for

(continued...)

A. Yes.

(...continued)

granting pricing flexibility to the ILEC for even residential local exchange service may not be far away.

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EXHIBIT WET-1

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July 03

STATE OF SOUTH CAROLINA)
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The undersigned, Jeanette B. Mattison, hereby certifies that she is employed by the Legal Department for BellSouth Telecommunications, Inc. ("BellSouth") and that she has caused BellSouth Telecommunications, Inc.'s substituted Direct Testimony of William E. Taylor, Ph. D. in Docket No. 2002-367-C and 2002-408-C to be served upon the following this July 23, 2003:

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